

CS130 - LAB - Programming Prep

Name: _____

SID: _____

In this course there will be several programming assignments that involve completing the implementation of functions in a larger body of existing code. This assignment will require you to familiarize yourself with the code used in the next assignment.

Before you begin, you will need to decide what environment you will be using for programming and compiling. If you aren't familiar with setting up programming environments, you can use UCR's cs130 server. Please see the document "Programming Assignments on cs130.cs.ucr.edu" on Canvas for more information. If you choose to use a different environment, you are responsible for setting up the environment and installing the appropriate libraries.

1. If necessary, download or upload the hw-1 archive from Canvas to the environment you plan to use for programming assignments.
2. Extract the hw-1 archive and navigate to the newly extracted '1' directory.
3. Look through all the code files ('h' and 'cpp' extensions) and find all the locations with "TODO". In only those files, add the following header to the top of the file (fill in your information appropriately):

```
// Student Name: [Your name]
// Student ID: [Your ID]
```

4. Which file defines the struct "Debug_Scope"?
■
5. Which file defines the global constant "small_t"?
■
6. How can you use the ray_tracer program to compare a test file to a solution image?
■

7. What additional output is generated when you do this?
■
8. What should the Object member function “Intersection” do if there are no intersections? It is okay if you don’t understand why yet.
■
9. What should the Box member function “Union” do?
■
10. Where is the variable “all_objects” declared, and what should you use it for?
■
11. What does the “componentwise_min” function do?
■
12. Compile the code using the provided “SConstruct” file. Include a screenshot of your successful compilation.
13. Run the provided grading-script.py file on the directory included with the assignment that contains test files.
14. Make a sub-directory named “hw-1”.
15. Copy only the “h” and “cpp” files from the assignment directory to “hw-1”.
16. Create a zip or tar archive file containing the “hw-1” directory and the answers to the math review questions and the questions in this document. This archive file should be named something like “[yournetid]-hw-1.zip” (ex: “jgoul004-hw-1.zip”). If you were to run the command “unzip -l [yournetid]-hw-1.zip” on a properly constructed archive file, the output should look something like this:

```

Archive:  jgoul004-hw-1.zip
  Length      Date    Time    Name
-----
         0  2023-01-08  09:35    hw-1/
      1198  2023-01-08  09:35    hw-1/box.cpp
      1036  2023-01-08  09:35    hw-1/box.h
      1178  2023-01-08  09:35    hw-1/camera.cpp
      1732  2023-01-08  09:35    hw-1/camera.h
        193  2023-01-08  09:35    hw-1/color.h
      3108  2023-01-08  09:35    hw-1/dump_png.cpp
        213  2023-01-08  09:35    hw-1/dump_png.h
        425  2023-01-08  09:35    hw-1/fixed_color.h

```

396	2023-01-08 09:35	hw-1/flat_shader.cpp
550	2023-01-08 09:35	hw-1/flat_shader.h
737	2023-01-08 09:35	hw-1/hit.h
379	2023-01-08 09:35	hw-1/light.h
5974	2023-01-08 09:35	hw-1/main.cpp
1408	2023-01-08 09:35	hw-1/misc.h
1340	2023-01-08 09:35	hw-1/object.h
2988	2023-01-08 09:35	hw-1/parse.cpp
4021	2023-01-08 09:35	hw-1/parse.h
545	2023-01-08 09:35	hw-1/plane.cpp
505	2023-01-08 09:35	hw-1/plane.h
672	2023-01-08 09:35	hw-1/ray.h
812	2023-01-08 09:35	hw-1/registration.cpp
1255	2023-01-08 09:35	hw-1/render_world.cpp
1428	2023-01-08 09:35	hw-1/render_world.h
423	2023-01-08 09:35	hw-1/shader.h
516	2023-01-08 09:35	hw-1/sphere.cpp
518	2023-01-08 09:35	hw-1/sphere.h
4514	2023-01-08 09:35	hw-1/vec.h
108478	2023-01-08 09:38	jgoul004-math-review.pdf
52091	2023-01-08 09:38	jgoul004-code-intro.pdf
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198633		30 files

17. Submit this archive file to Canvas as your homework 1 submission.